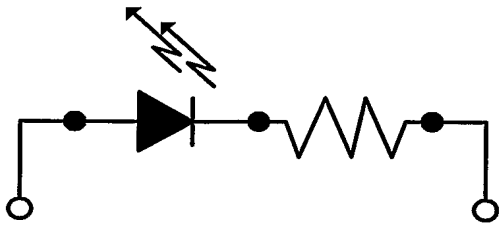

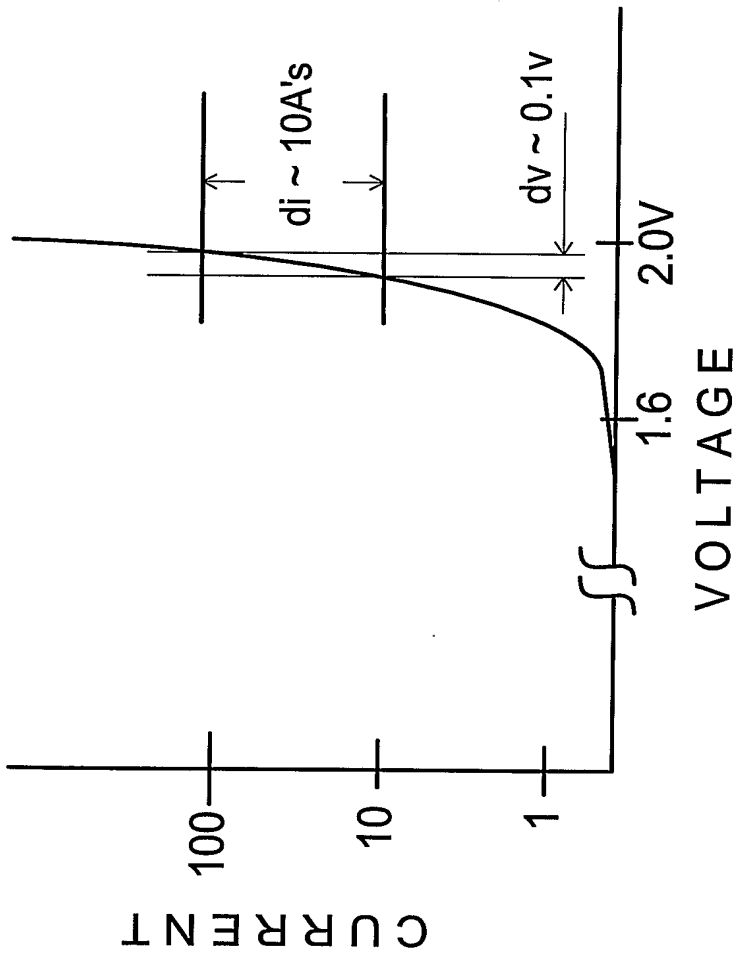

Fig. 1

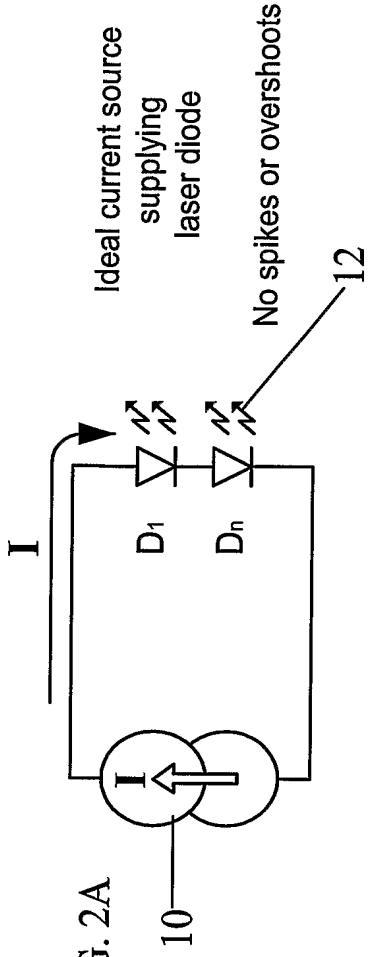

FIG. 2A

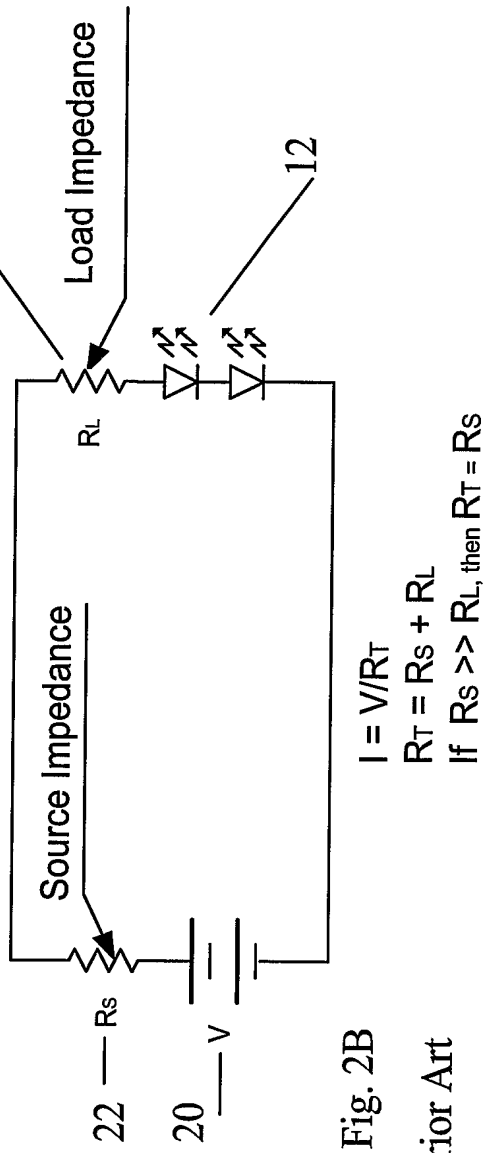

Fig. 2B
Prior Art

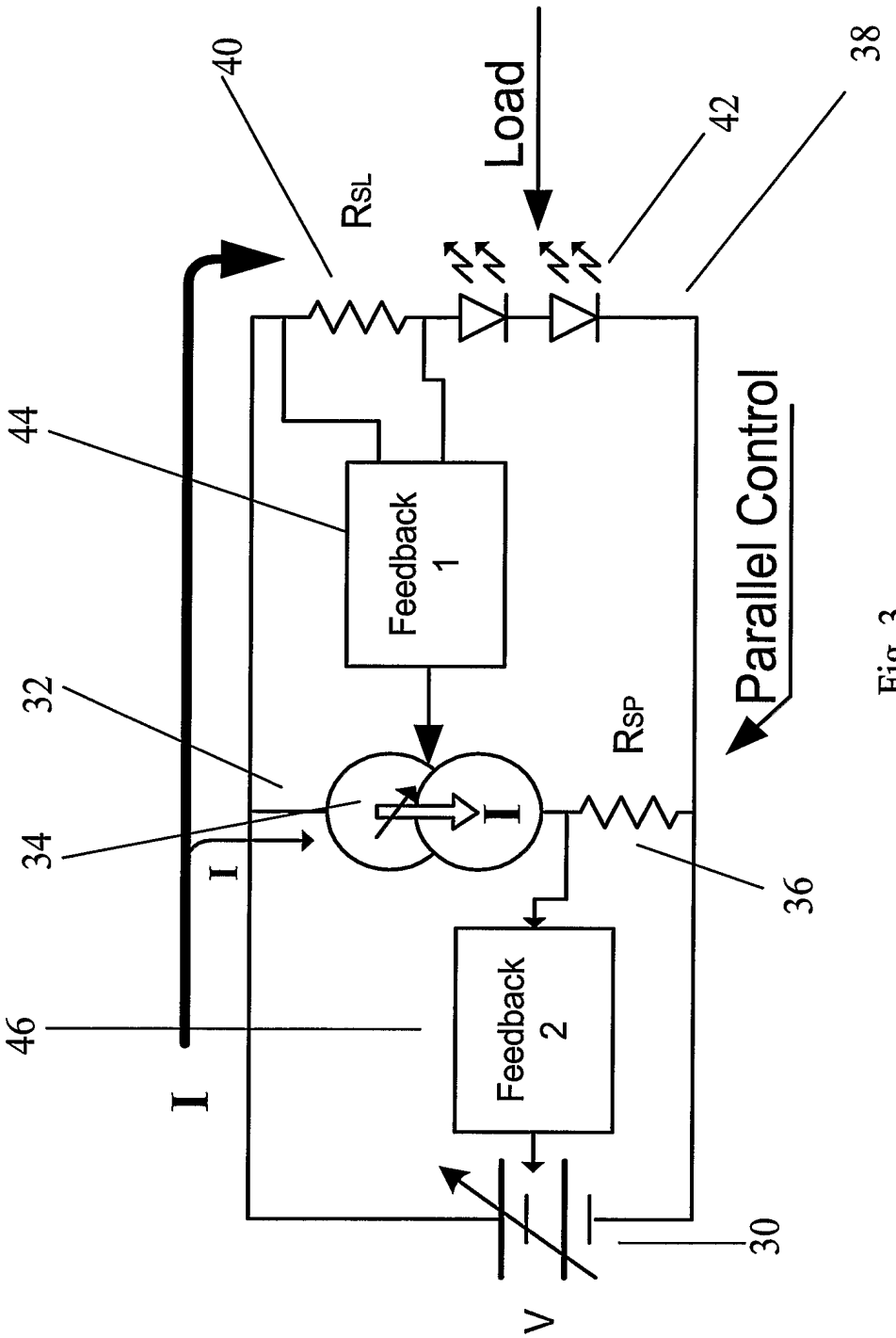
40
Load
42
38
RSL
44
Feedback 1
Parallel Control
32
RSP
34
I
I
36
46
Feedback 2
I
30
V

Fig. 3

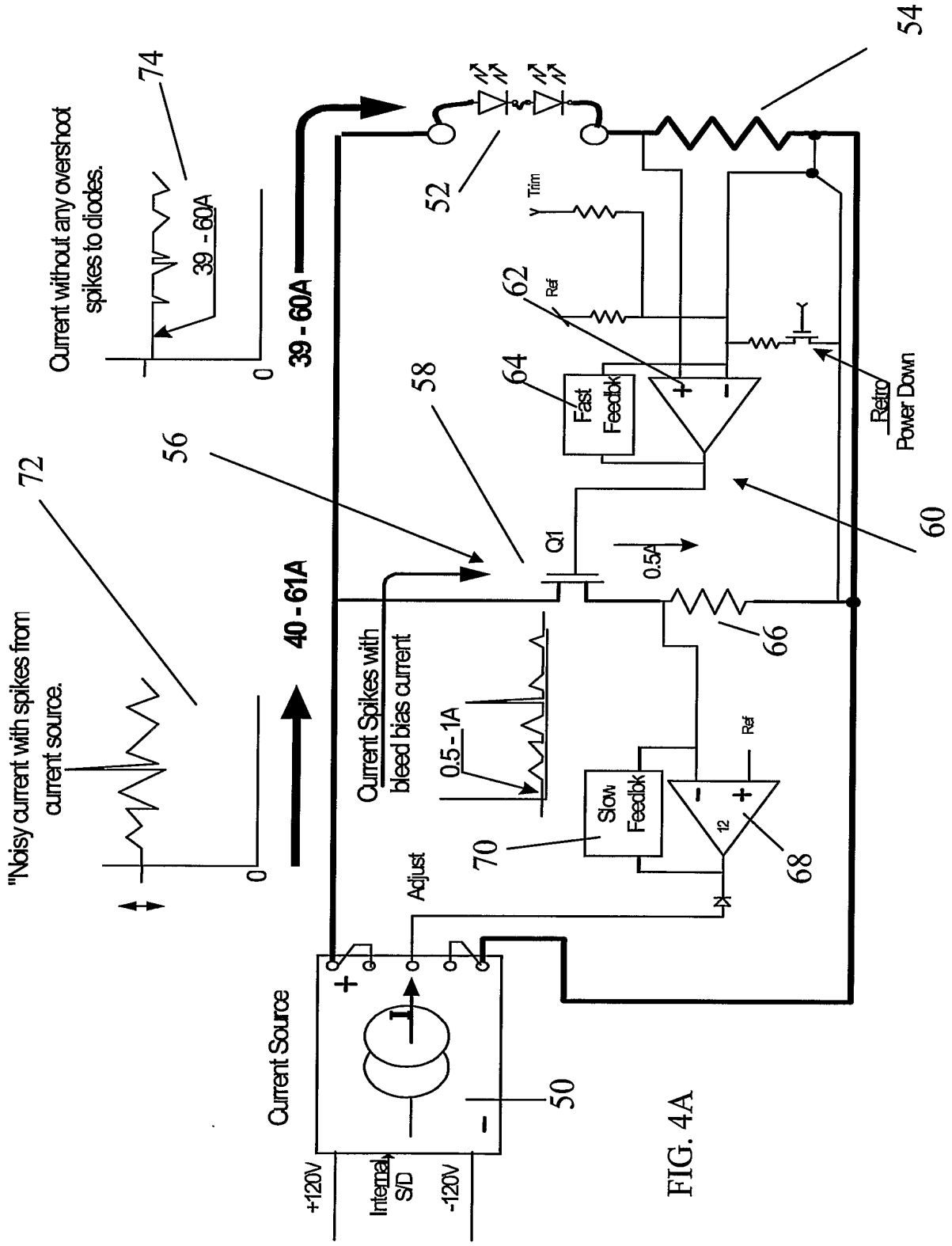
"Noisy current with spikes from current source.
72
Current without any overshoot spikes to diodes.
74
39 - 60A
0
39 - 60A
40 - 61A
Current Spikes with bleed bias current
0.5 - 1A
Current Source
+120V
Internal S/D
-120V
Adjust
50
52
54
56
58
60
62
64
66
68
70
Q1
0.5A
Fast Feedbk
Slow Feedbk
Ref
Trim
Retro Power Down

FIG. 4A

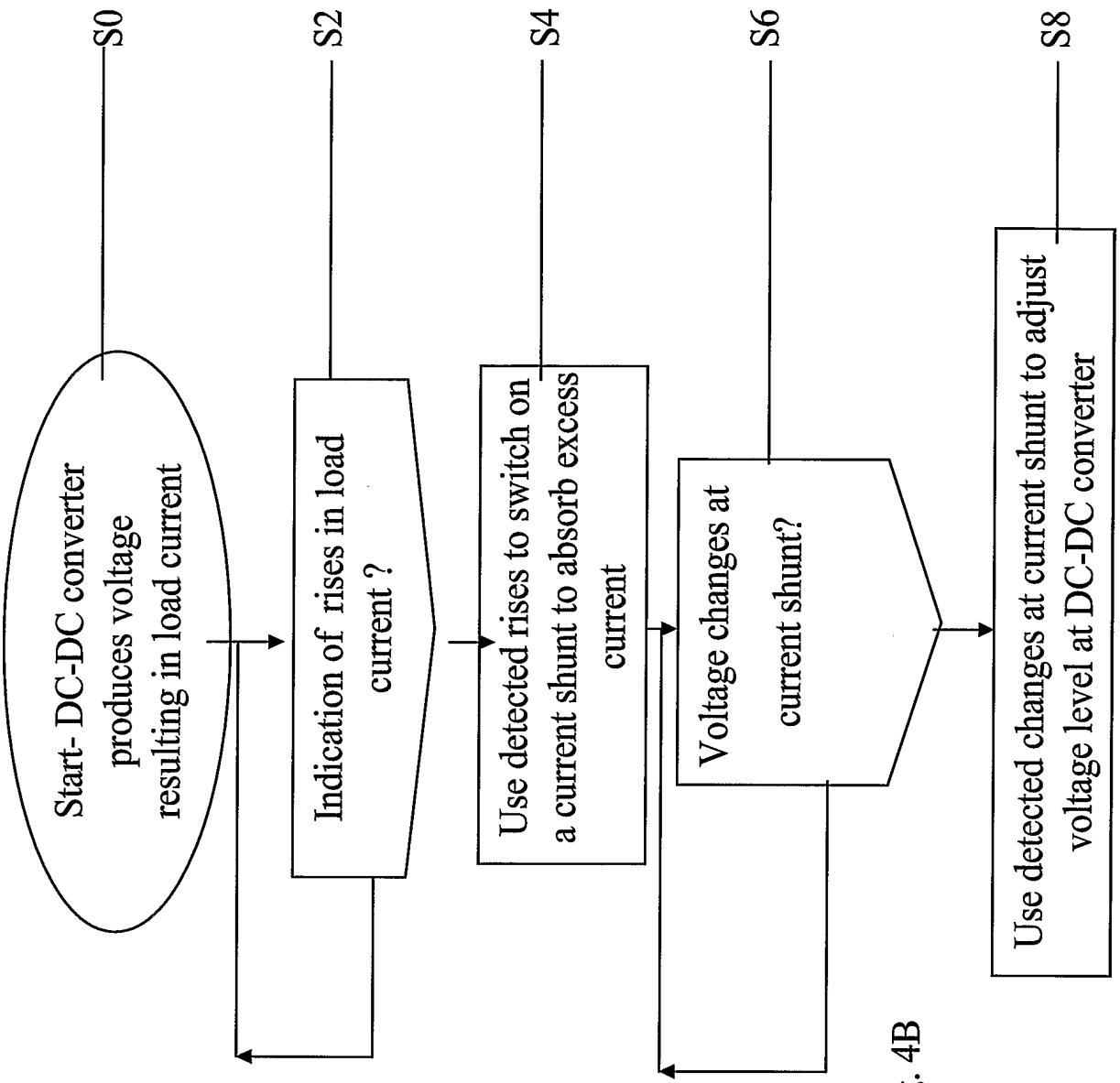
S0
Start- DC-DC converter produces voltage resulting in load current
S2
Indication of rises in load current ?
S4
Use detected rises to switch on a current shunt to absorb excess current
S6
Voltage changes at current shunt?
S8
Use detected changes at current shunt to adjust voltage level at DC-DC converter

Fig. 4B

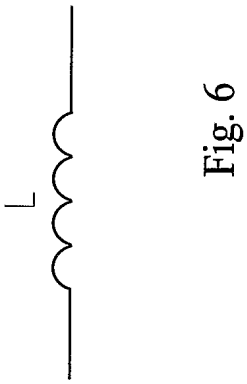

Fig. 6

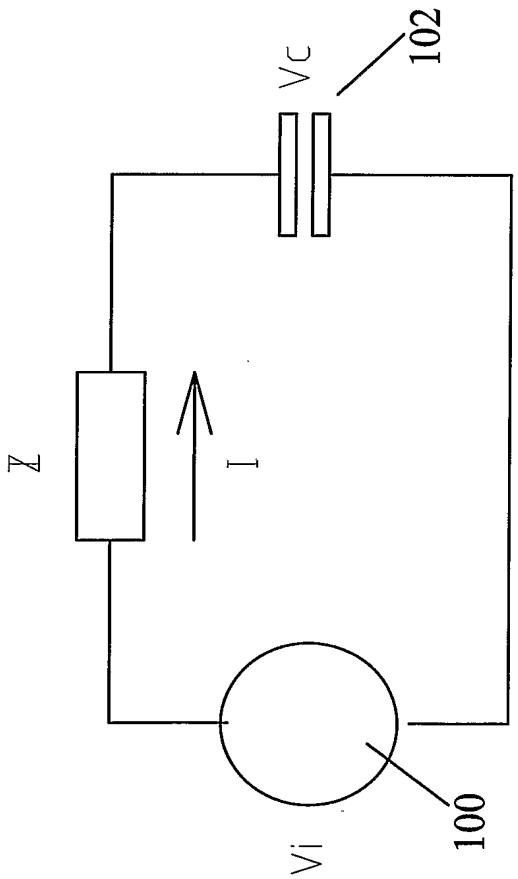

Fig. 5

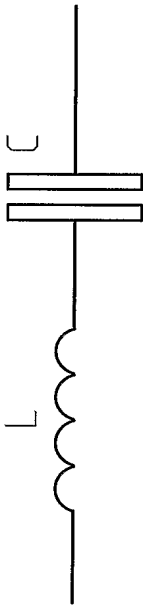

Fig. 7

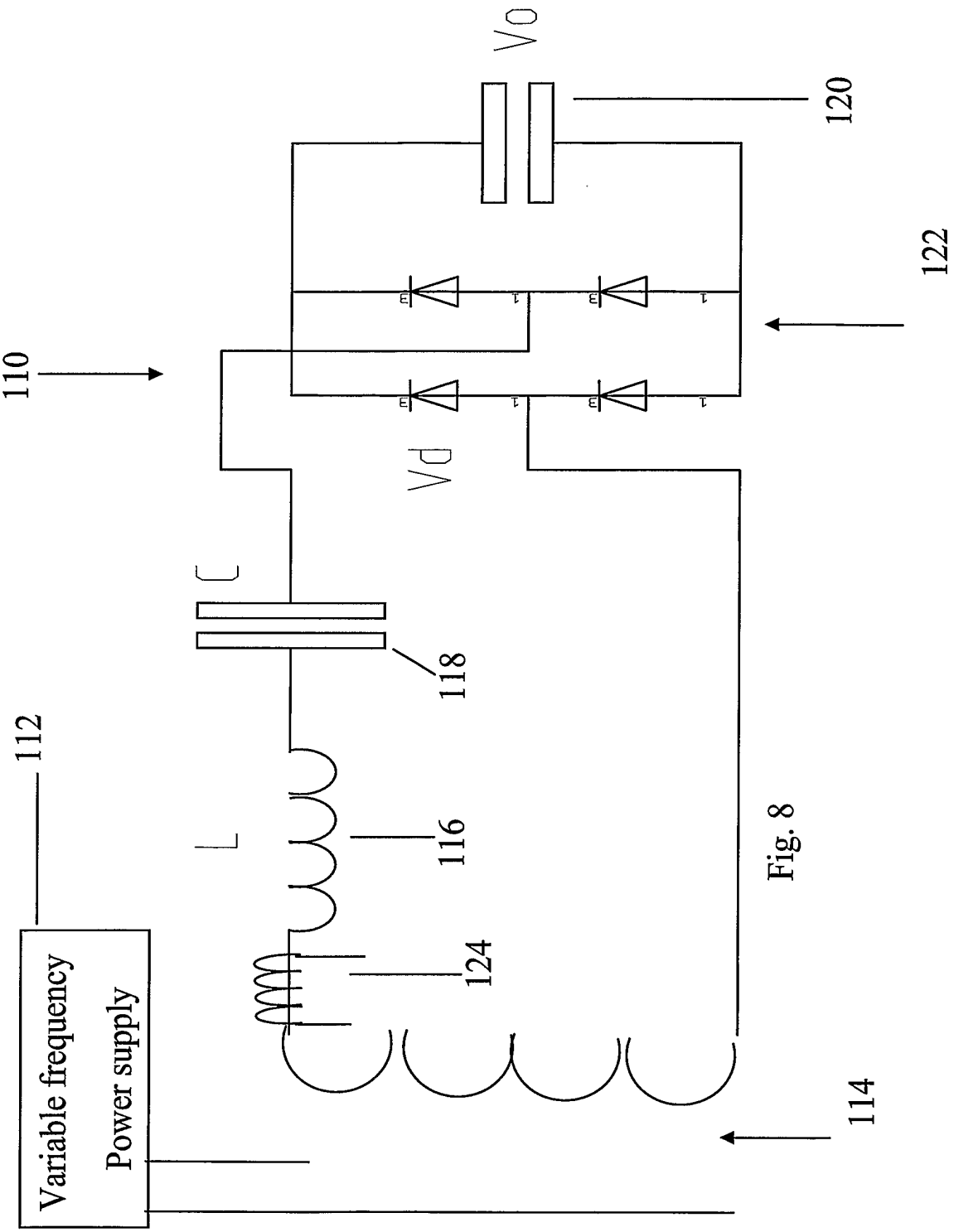
Vo
120
122
110
Vd
C
118
112
L
116
124
Variable frequency
Power supply
114

Fig. 8

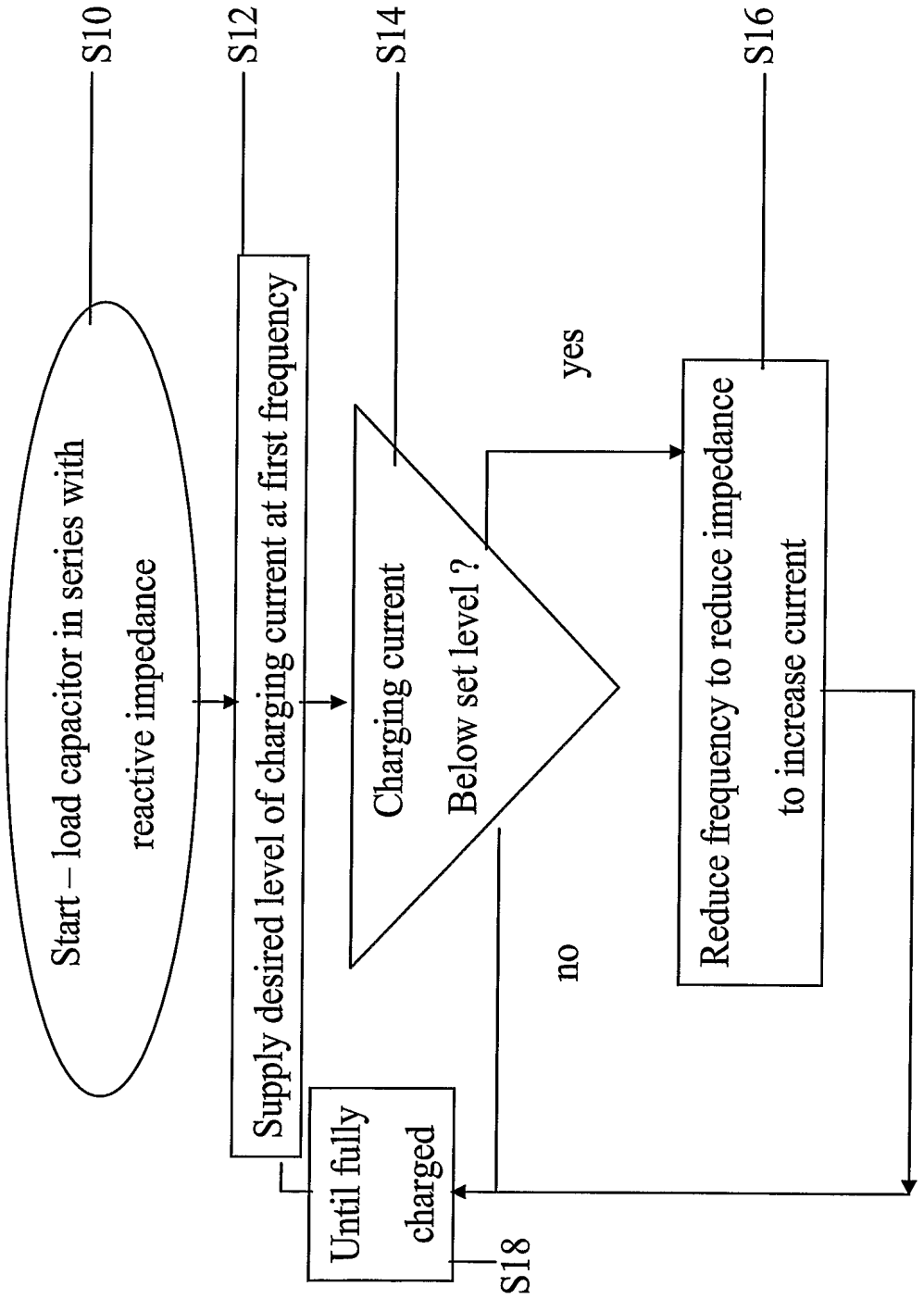
S10
Start – load capacitor in series with reactive impedance
S12
Supply desired level of charging current at first frequency
S14
Charging current Below set level ?
yes
no
S16
Reduce frequency to reduce impedance to increase current
Until fully charged
S18

Fig. 9

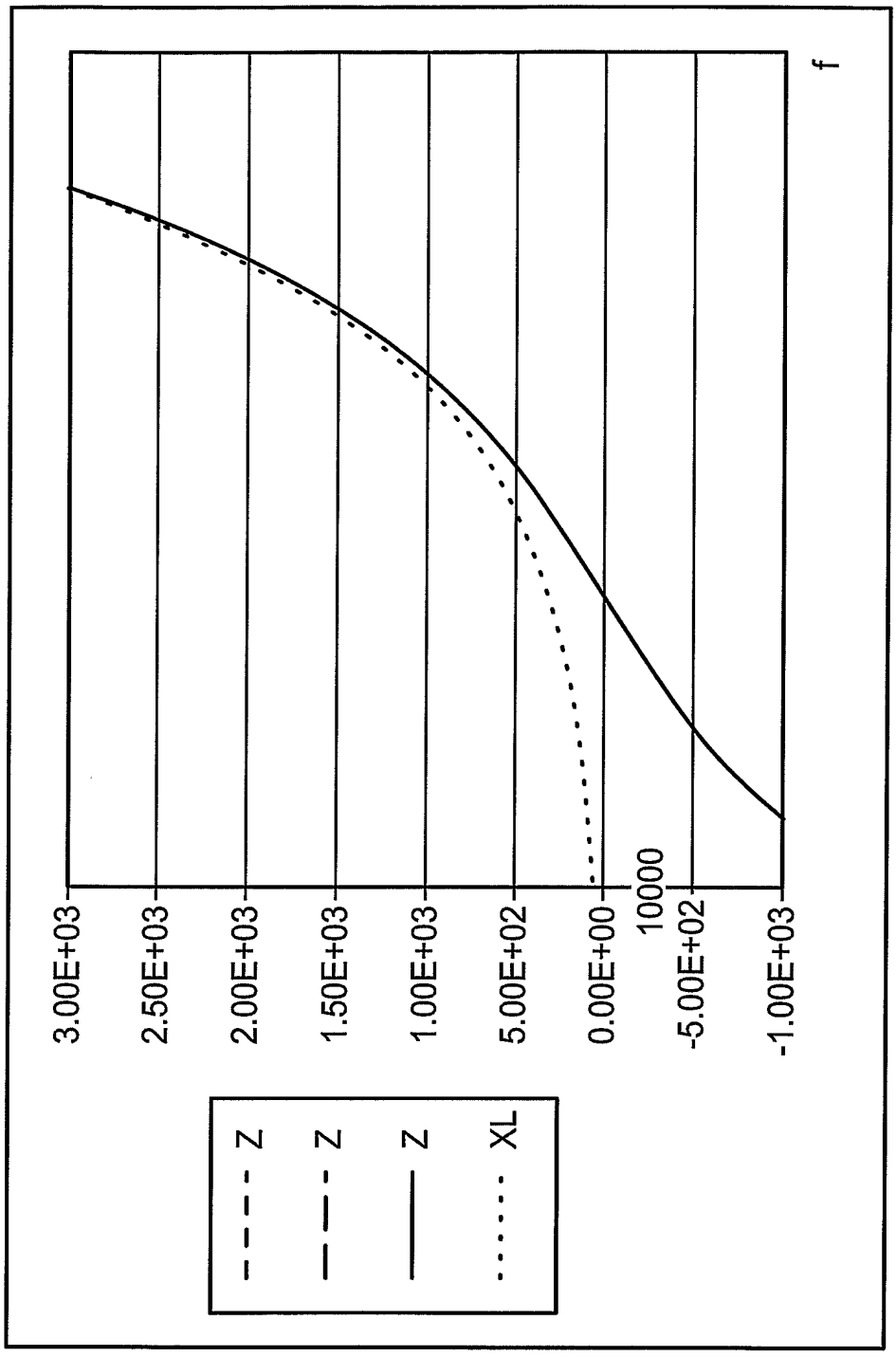
f
3.00E+03
2.50E+03
2.00E+03
1.50E+03
1.00E+03
5.00E+02
0.00E+00
10000
-5.00E+02
-1.00E+03
Z
Z
Z
XL

Fig. 10